

Abstract of the Disclosure

A conversion integrated circuit (IC) for RF signals has a first interface for transmitting or receiving a first number of distinct RF frequency bands in a broadband spectrum, a plurality of circuit elements coupled to the first interface, one for each of the frequency bands, for up-conversion or down-conversion of the frequency bands to and from an intermediate frequency (IF), a second interface coupled to said circuit elements for receiving and transmitting at the intermediate frequency (IF), and a second number of on-chip voltage-controlled oscillators (VCOs) coupled to the circuit elements for generating local-oscillator (LO) signals to the circuit elements for conversion between the IF frequency and the receive or transmit frequency for each band. The IC is characterized in that the second number is smaller than the first number.